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Sammy Spitzer

At the Edge of Dreamland:

Media Encounters in Architectural Venues

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The *Dream Machine* is a collaborative, interactive work currently under development by the MIT Media Lab's Interactive Cinema Group. The *Dream Machine* project focuses on the creation of a highly-distributed narrative presence which spans and interconnects several widely-differing modes of presentation and involvement, including: the World Wide Web; a network of pagers and pager-like "smart badges;" and large-scale multimedia installations situated in "live" architectural spaces throughout

the world

The Dream Machine explores and expands the techniques of cinema, live performance, magic, sculpture, and architectural space design to craft an emergent story experience in close collaboration with its audience of "co-actors." Interpersonal communications are enabled and enhanced as participants (either as individuals or groups) shape and navigate their way through personalizable, information-rich environments and dynamically adaptive, emergent stories. Audience involvement is designed to be playful, lyrical, intuitive, conversational, and improvisational. Social and narrative meaning emerges through interactions with:

Interesting transcultural characters, locations, and situations;

Personal dream creation, submission, processing, presentation, and interpersonal bartering;

Information ecologies, geologies, and geographies.

In this paper, we focus primarily on the purpose, structure, technology, and content of Live Sites situated in architectural spaces. Arrays of "fuzzy sensors" (such as sonar, radar, and electromagnetic field detectors) alert the system to the presence and activities of passers-by; large-scale rear-screen projections and sophisticated audio playouts respond dynamically to the signals from these sensing devices, orchestrated by *Isis*, a new stream-control language.

Purpose

The Dream Machine project grows out of the desire to explore a grammar for interactivity which takes the network's global nature into account. In defining the constraints for this work, we seek to investigate the nature of emergent narrative systems which invite their audience to engage in a complementary process of making and participation. In these systems, meaning is not pre-constructed. Story emerges overtime, steered by sequential interactions with one or many people. As information flows, the information itself exhibits idiosyncratic behaviors, timing, latency, and catalyzing effects. Meaning is conferred by temporally disjunct associations and interactions. The system must respond to history.

The Dream Machine project builds upon traditions of life as well as of cinema, theater, architecture, and computation. It exists on the network and in a series of Live Sites. Designed to offer compelling "out-of-the-box" experiences in a live architectural setting, large-scale video is interactively projected into a sensor-rich "responsive space" which desires to startle and surprise the innocent passer-by with fragments of memory, temporal collages, images as if from a dream. Walking down the street, we smell a rose; look, there it is; we know it but cannot take it with us.

Where should this place of encounters – "the Edge of Dreamland" – be situated? In a busy hallway ... a place through which one passes to get somewhere else? In a colonnade? In the window of a mall; at MIT; in Chicago, or Shanghai, or London? We connect via a global network, but we are still physically present in a particular place at a particular time. The story evolves in both the diffuse geography of the network and our architectural surround in space; metaphoric mappings and behaviors acknowledge the connectivity between them.

Background: Situated Media and Modes of Interaction

Situated art reveals its meaning in part through the work itself and in part through its physical and symbolic surround. Typically, an artist will use "found" history or a topical situation of a place to extend the meaning of a work, either metaphorically or literally.

In his final work *Etant donné*: 1° la chute d'eau, 2° le gaz d'éclairage (Giren: 1. *The Waterfall*, 2. *The Illuminating Gas*) (1946-1966) – which is on display at the Philadelphia Museum of Art, Marcel Duchamp creates a complex web of meaning by situating his work in a museum. To Duchamp, father of the ready-made, the museum stands as an art cemetery, a place where the current ideas which drive art creation languish and the art object becomes an antiquity. To the uninitiated who arrive at the old door encased in masonry by way of the main gallery spaces, there is an odd sense of having entered some "behind the scenes" part of the museum. Indeed, if no one is in the room to guide them to the two small holes in the wooden door, the uninitiated viewer may leave as they entered, never viewing the final, erotic *mise-en-scène* whose perversely symbolic narratology is composed entirely of ready-mades.

In *Dream Machine*, we seek to connect the participant with a sense of global space. Scenarios played out at the "Edge of Dreamland" can reflect common culture, as in the flight of pigeons; local culture, as in a South Boston stoop or a model decked out in a Media Lab wearable-computer fashion; or global culture, as in an Indian Dancer performing on a collage of images from the WWW. How does the meaning of these scenarios change as we move "The Edge of Dreamland" to other locations around the globe? As we grow our collection of scenarios for situated space, we can begin to orchestrate commentary by association and contrast. We walk along a colonnade; our motion alters the architectural perspective; we see a court yard with pigeons. Some time later, perhaps in a different

location, we see a courtyard up close; pigeons are feeding; we approach and the pigeons fly away; we leave, and they return.

Several earlier pieces built in the Interactive Cinema Group explored the ideas of architectural place and human connectivity. In 1987, we developed *Radio Interference* in collaboration with the Antenna Theater troupe. In this work, the setting was minimally reactive; it was the human actor who saved the day, leading participants through the theatrical experience of particular scenarios. In this carnival atmosphere, only the *Proximity Pieces* waited without fanfare for someone to pass by and trip an invisible IR sensor. Instantly, an adjacent monitor came alive in the dim light of the Media Lab Cube; a face turned quickly toward the startled passer-by. "Bet you left your keys in the car," he said; invariably, the now anxious visitor quickly patted her pants pocket to check.

Perhaps more self-consciously, *The Wheel of Uve* partnered an explorer and a guide from the waiting audience. As the explorer made her way through a physical landscape of opportunity and fantasy, the guide transmitted timely messages which revealed potentialities for interaction. Once again situated in the Media Lab cube, this work suggested that structured human-human duets across a network could be engaging so long as the participants understood the consequence of their actions and experienced a payoff commensurate with the narrative effort. More recently, in *Sleep Depraved*, Freedom Baird explores the implications of a technologically-mediated duet with a virtual character.

In situated work, the physicality of interaction invites us to play with "fuzzy" measures of time, scale, and meaning. How long does it take us to pass a display; what are the synesthetic boundaries of our response; how do we internalize the experience? The opportunity to detect, measure, and moderate individual responses brings us full circle to the network presence. As an uninitiated passer-by experiences surprise or captures a memory, this transformational consequence signals a shift in the state of the network itself. The architectural place can now be thought of as an extension of the ganglia of the diffuse network; or the reverse, the network itself can be considered an extension of physical place, a satellite of the world whose bag of addresses and messages is in a state of dynamic flux.

Out-of-the-Box Experience: Structure, Technology, Content

Collaboration builds on an initial vision and the circumstances of participation. Over time, collaborative work shifts and grows, dancing to the tune of multiple contributors. What comes first: the vision, the architecture, the content? In the case of *Dream Machine*, the desire to play with large-screen projections in casual architectural space was empowered by the creation of *Isis*, a media scripting language currently under development by Agamoniis at the Media Laboratory.

As the geography of *Dreamland* emerged, a hallway bounded on one side by a glass wall – which is now covered with a large-scale rear-projection screen – suggested itself as "The Edge of Dreamland." Combined with an array of "fuzzy" sonar sensors used to detect human passage and activity within the space, the "Edge of Dreamland" becomes a transitional space which reveals itself to people hurrying by from either direction. How shall we map consequence to such a space? The challenge of creating interactive experiences for this enhanced architectural passage strains the imagination. This is not a place to stop and perform: it is a familiar and functional place one normally passes through on the way to somewhere else. That preconception about place provides us with an opportunity to surprise and delight by offering people a chance encounter, triggered by entering the purview of a non-contact sensor. This is a place where scale of time and scale of space matter. Like passing by the Hancock Building and watching ones image ripple on the glass, or walking up to the Forbidden City, there is a closeness here which provides us with insights into interactive grammar.

What should happen at the edge of Dreamland? Something believable. Something revealing.

Something that gives the passer-by something that they did not have before. In a series of experiments in our Lab this summer, Sammy Spitzer developed the notion of *Street Encounters*. In one such encounter, as the casual passer-by walks down the hallway she sees pigeons feeding. Just as she moves in parallel to the frame of the projection screen, the pigeons are startled and fly away. After a moment, the flock returns, as pigeons are wont to do. Visually and kinesthetically, this piece surprises. In an act of agency, we disturb a representation of living things whose real nature is known to be skittish. In this piece, *Isis* responds to a simple serial signal from the first sensor in the array: a "trip-wire" approach to interaction.

Jayshree, an encounter with a classically-trained Indian dancer, relies on a slightly more complex monitoring of the sensor array. As the passer-by strolls down the corridor, a small image of Jayshree scans the hallway, looking for her audience. As the passer-by enters the space and trips the first sensor, a full-scale Jayshree symbolically applies her make-up and begins her dance. Woe to the passer-by who walks out during Jayshree's performance: her larger-than-life head turns to glare angrily at the departing pedestrian, then fades and shrinks to nothingness. While the interaction in this piece remains simple (two trip wires and a knowledge of the direction in which you are exiting the space), Agamoniis has expertly scripted the experience in *Isis* using the image-processing primitives of positioning, scaling, and transparency. The way in which *Isis* supports various levels of authoring abstraction and of user expertise makes this language ideal for large collaborative ventures. Using a

single language base, creators may script complex animations and behaviors using high-level constructs; or, they may write drivers for in-house sensors and otherwise hack low-level system operations. The small yet complete syntax of Isis lessens the burden on novices while allowing experienced programmers to take full advantage of their skills.

So far, we have experimented mostly with a trip-wire approach to scenario interaction. However, several pieces now in development will use a lateral follow-motion to create a shadow play with the motion of the participant. Scenarios such as *Girl Revealing Toes with a Flashlight*, remind us of the well-known "disclosure sequence" in Raherty's *Moana*: only after showing us several repetitions in close-up of a boy's arms around a tree trunk intercut with his feet jumping up the trunk does Flaherty pull back to show us the enormous height of the palm tree.

Reciprocity and Interconnection: Highly-Distributed Interactive Opportunity

One central goal of the *Dream Machine* is to interconnect a very distributed society of audience by means of a robust, dynamically adaptive narrative entity. This means that shared aspects of the world must be communicated among several widely-separated sites, and that information about activities and changes at each site must move within and between participant worlds. Emergent narrative requires both a grammar and an engine for driving story setting, character, activity, and history.

As we construct our very distributed story world, we are focusing on two particularly useful types of information-moving engines. The first, called *Happenstance*, is flexible storytelling testbed which expands the literary and theatrical notions of "Place" and "Situation" to accommodate interactive, on-the-fly story construction. Important aspects of story content and context are made visible, tangible, and manipulable by systematically couching them within the metaphors of ecology, geology, and weather. Information-rich environments become conceptual landscapes which grow, change, and evolve over time and through use. Current information follows a natural cycle modeled after the Earth's water cycle. Older information, history, and complex conceptual constructs, built up by the flow of data over time, are manifested in the rock and soil cycles. Directed inquiries, explorations of theory, and activities associated with the audience's personal interests are captured and reflected by plant growth. As a result, information itself is imbued with sets of *systemi~ semi-autonomous* behaviors which allow it to move and act intelligently within the story world and other navigable information spaces.

The second engine, called *Groove*, is an experimental client-server prototype which does "air-traffic controlling" of objects, properties, state changes, and other vital narrative information as it flows between sites. A detailed description of this architecture will be the subject of a later paper.

Conclusion

"The Edge of Dreamland" encourages us to ask, what does it mean to situate a media projection in a hallway where a passer-by disturbs or changes the course of a narrative? How can granular content be structured to communicate meaningfully in brief, unanticipated encounters? What happens to the notion of "author" in these spaces, where the audience plays an active role in the co-construction of narrative meaning?

In my Fall course, *Workshop in Elastic Movie Time*, several student teams are developing their own scenarios - and their own sensate canvases - for "The Edge of Dreamland." By December 1997, the situations, characters, and activities they create will be inextricably linked with the broader, more heavily trafficked World Wide Web implementation of our narrative space. As we amass more and more of these granular story elements, we can begin to ask about signification at the collective edges of the experience,

The fun of building these pieces is matched to our learning. For now, we are on a shake-down cruise of new technologies, new paradigms of engagement, new scenario types, and fresh content. We sense that the greatest opportunities for interaction reside in the transitions between granular story elements; and, we are beginning to explore how Plot grows out of such nebulous, short-term structures.
